

APPENDIX B

1. An isolated nucleic acid molecule selected from the group consisting of:
 - (a) a nucleic acid molecule comprising the nucleotide sequence set forth in SEQ ID NO:1; and
 - (b) a nucleic acid molecule comprising the nucleotide sequence set forth in SEQ ID NO:3.
2. An isolated nucleic acid molecule which encodes a polypeptide comprising the amino acid sequence set forth in SEQ ID NO: 2.
4. An isolated nucleic acid molecule which encodes a naturally occurring allelic variant of a polypeptide comprising the amino acid sequence set forth in SEQ ID NO: 2.
5. An isolated nucleic acid molecule selected from the group consisting of:
 - (a) a nucleic acid molecule comprising an AS3 (Androgen Shutoff Gene 3) nucleotide sequence which has at least 70% identity to the nucleotide sequence of SEQ ID NO:1 or 3, or a complement thereof;
 - (b) a nucleic acid molecule comprising a fragment of at least 250 nucleotides of a nucleic acid comprising the nucleotide sequence of SEQ ID NO:1 or 3, or a complement thereof;
 - (c) a nucleic acid molecule which encodes an AS3 (Androgen Shutoff Gene 3) polypeptide comprising an amino acid sequence having at least about 70% identity to the amino acid sequence of SEQ ID NO:2; and
 - (d) a nucleic acid molecule which encodes a fragment of a polypeptide comprising the amino acid sequence of SEQ ID NO:2, wherein the fragment comprises at least 15 contiguous amino acid residues of the amino acid sequence of SEQ ID NO:2.
6. An isolated nucleic acid molecule which hybridizes to the nucleic acid molecule of any one of claims 1, 2, 3, 4, or 5 under stringent conditions of 6x SSC at about 45°C followed by washing.
7. An isolated nucleic acid molecule comprising a nucleotide sequence which is complementary to the nucleotide sequence of the nucleic acid molecule of any one of claims 1, 2, 3, 4, or 5.
8. An isolated nucleic acid molecule comprising the nucleic acid molecule of any one of claims 1, 2, 3, 4, or 5, and a nucleotide sequence encoding a heterologous polypeptide.

9. A vector comprising the nucleic acid molecule of any one of claims 1, 2, 3, 4, or 5.
10. The vector of claim 9, which is an expression vector.
11. A host cell transfected with the expression vector of claim 10.
12. A method of producing a polypeptide comprising culturing the host cell of claim 11 in an appropriate culture medium to, thereby, produce the polypeptide.
47. A kit for diagnosing a mammal for the presence of a disease involving altered cell proliferation or an increased likelihood of developing a disease involving altered cell proliferation, said kit comprising a material for measuring AS3 (Androgen Shutoff Gene 3) RNA.
48. A method of obtaining a AS3 (Androgen Shutoff Gene 3) polypeptide, said method comprising:
 - (a) providing a cell with DNA encoding a AS3 (Androgen Shutoff Gene 3) polypeptide, said DNA being positioned for expression in said cell;
 - (b) culturing said cell under conditions for expressing said DNA; and
 - (c) isolating said AS3 polypeptide whereby an AS3 (Androgen Shutoff Gene 3) polypeptide is obtained.
49. A method of isolating a AS3 (Androgen Shutoff Gene 3) gene or portion thereof having sequence identity to human AS3 (Androgen Shutoff Gene 3), said method comprising amplifying by polymerase chain reaction said AS3 (Androgen Shutoff Gene 3) gene or portion thereof using oligonucleotide primers wherein said primers
 - (a) are each greater than 15 nucleotides in length;
 - (b) each have regions of complementarity to opposite DNA strands in a region of the nucleotide sequence of SEQ ID NO: 1; and
 - (c) optionally contain sequences capable of producing restriction endonuclease cut sites in the amplified product; and isolating said AS3 gene or portion thereof whereby an AS3 (Androgen Shutoff Gene 3) or portion thereof is isolated.
51. (Amended) A kit for determining if a subject is at increased risk of developing prostate cancer comprising:

(a) at least one reagent that specifically detects an AS3 (Androgen Shutoff Gene 3) molecule, wherein said reagent is a nucleic acid that can selectively bind to a nucleic acid encoding AS3 (Androgen Shutoff Gene 3); and

(b) instructions for determining that the subject is at increased risk of developing prostate cancer by

detecting the presence or absence of AS3 (Androgen Shutoff Gene 3) in said subject with at least one reagent; and

observing whether or not the subject is at increased risk of developing prostate cancer by observing if the presence of AS3 (Androgen Shutoff Gene 3) is or is not detected with said at least one reagent, wherein reduced or absent levels of AS3 (Androgen Shutoff Gene 3) indicates said subject is at increased risk of developing prostate cancer.